



University of Novi Sad
**INSTITUTE
OF FOOD
TECHNOLOGY
IN NOVI SAD**

TECH
congress
25-27. 10. 2016.

Novi Sad, Serbia



International Congress
**Food Technology,
Quality and Safety**

**CELEBRATING
FOOD**

PROCEEDINGS

THE POULTRY MARKET IN UKRAINE: PROBLEMS, OBJECTIVE AND SOLUTIONS

Natalia Povarova, Liudmyla Melnyk*

*Department of meat, fish and seafood, Odessa National Academy of Food Technologies, Odessa, Ukraine

*Corresponding author:

E-mail address: milochka_net@mail.ru

ABSTRACT

One of the segments of meat market in Ukraine which is developing at fast pace is poultry meat. This is because poultry is considered a quality, high-protein food low in calories compared to pork and beef. In poultry, collagen and elastin content is lower than in the flesh of cattle, and due to this increased content of valuable protein, poultry is absorbed more easily (96-98%) by the human body than meat of other farm animals, and is also different with regard to optimal quantitative ratio of essential amino acids. The composition of bird muscle also includes almost all water-soluble vitamins. Meat is one of the sources of B vitamins. Also, bird muscles are rich in macro- and micronutrients which are essential for metabolism.

New poultry industry growth trends demonstrate a stable and dynamic development. Despite the considerable scientific and practical potential of poultry production, the issue of determining its quality cannot be fully solved. In this work we examined a number of factors that affect the functional and technological properties of poultry meat. For example, for the same age gutted carcasses weight (the main feature of the breed) can vary significantly, and therefore, the quality of meat carcasses and parts will also be different.

Keywords: *quality, poultry meat, aviculture, autolysis, maturation*

INTRODUCTION

Modern Ukrainian poultry industry is one of the most attractive areas of Ukrainian agriculture for investors. Thanks to private capital, introduction of new technologies and purchase of modern equipment was enabled, which in turn provided increased production. Over the past 5 years, consumers have consumed 2 times more poultry meat and eggs, and buyers began to again give preference to domestic products. At the same time, many enterprises are not operating at full capacity or are even closed. This in particular applies to companies where previously turkeys, geese and ducks were grown. Nevertheless, poultry ranks first among other livestock industries by the time spent per unit of production and finished goods, namely meat. This is because it is virtually the only sector in livestock industry which is capable to radically improve the provision of population with cheap and high-quality meat during the recent years.

This branch brings together 680 poultry farms of different ownership forms, of which 102 are specialized in the production of pedigree products, 150 for the production of eggs, 80 are specialized in the production of poultry meat, while other farms deal with incubator-poultry and off-farm enterprises. The poultry industry is developed in 23 out of 25 regions of Ukraine.

Specialized management through a network of incubator-poultry organizations that are part of «Ukrainian poultry industry», provides the population with young birds, and is exerting a decisive influence on the development of poultry farms in the individual sector. At the same time, achievements in cross breeding poultry breeding farms and the top foreign companies are becoming available to a large farms and population. Specialists of «Ukrainian poultry industry» held a workshop on preparation and conducting of certification of pedigree poultry farms of Ukraine. As a result of certification of companies that have passed the competition,

we received certificates of pedigree breeding farm with the assignment status Plemreproducer. The most common chicken breeds which are used in the Ukrainian poultry industry today are the following:

- Egg chickens: Lohmann Brown, Shaver-576, Belarus-9 High Line white, brown hi-line, the Tetra-SL-Bovans Goldline, Isa Brown, Hajseks Brown, Lohmann-White, Borki-2M Borki- 117, Borki-Color, Sloboda, Rhodonite, Harco, Dominant, Iza White, Sloboda 2A, Ukraine;
- Broilers: Cobb-500 Arbor Aykres, Change, Hubbard-Isa, Ross 308, Starbro.

The average profitability of poultry production at the enterprises of Ukraine in the period 1999-2003 was gradually increased from -45.5% to the level of its payback. From 2004 to 2006, production of poultry meat has been profitable, with an increase in average margins from 3.8% to 12.1%, reaching a peak of 24.9% in 2005.

However, since 2006 the situation has began to change for the worse. Political instability, the processes of monopolization of the poultry market, the import of cheap products from abroad, deterioration of the means of production have led to a decrease in the profitability of most businesses and, as a consequence, to their bankruptcy. Therefore, during just one year (from 2006 to 2007 years) the profitability decreased from 19% to 12.1%. This was followed by the global economic crisis, which also had a negative impact on the state of the industry.

Despite all these factors, a linear trend has still shown a positive value in gain of almost 1.7% per year in the period from 2007 to 2012. This allows us to conclude that the profitability of enterprises for the production of poultry meat is gradually approaching the level of payback.

Analysis of the results showed that the Ukrainian poultry industry will continue to develop dynamically.

Average profitability, according to the production of poultry meat to Ukrainian enterprises of reporting period 2007-2012 years has shown a gain of 1.7% per year. With such growth rates, the level of recoupment of poultry meat production will be reached in 2017, and will increase to almost 5% in 2020.

According to the calculations of linear and polynomial trend obtained in the previous period, it is clear that, by 2020, the number of birds will increase by 20% compared to 2012. Total head of livestock poultry is presented in Figure 1.

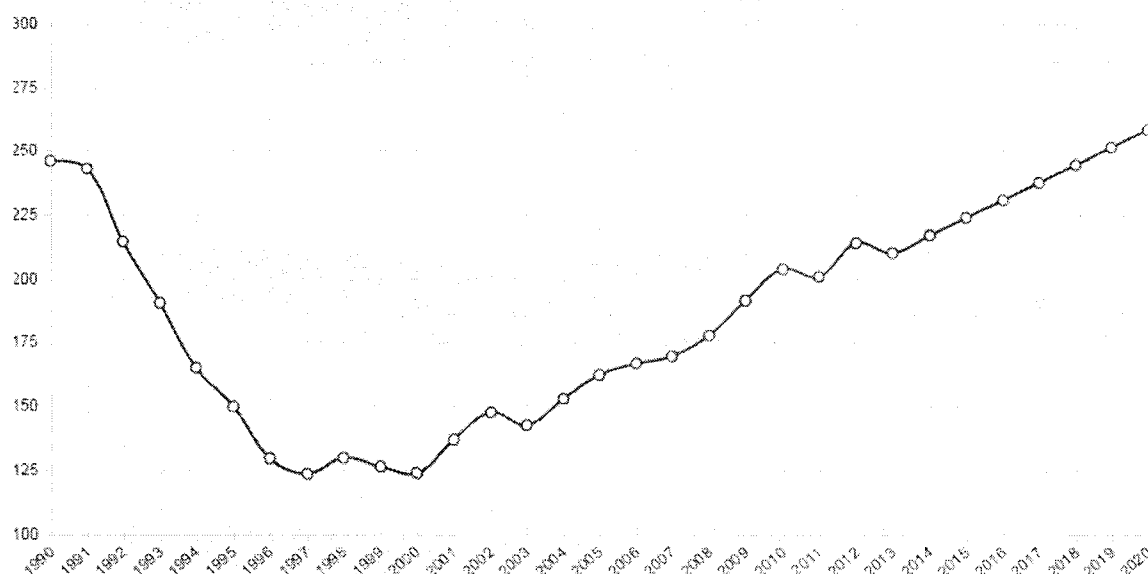


Figure 1 - The total head of livestock of poultry, million head

The urgency of the problem

Positive changes in the development of poultry meat in the world and Ukraine are caused by the creation and widespread introduction of highly cross-meat poultry, industrial cultivation technologies, content and processing. However, due to a significant increase in the production and processing of poultry, the impact of a series of natural, technical and organizational factors at all stages of production can lead to degradation of the quality, appearance of various product defects and related quantitative loss of meat.

Increasingly important work of domestic and foreign scientists, is aimed at studying the effect of these factors on the quality and safety of poultry meat.

Little attention is paid to the system interlinkages of technological, technical and organizational factors in the cultivation, processing and delivery of poultry with the quality of the finished product, while at the same time improving them is a more effective way to increase efficiency in comparison with other production factors.

The general concept of "quality food", includes poultry products, embedded set of properties that characterize the biological and energy value, organoleptic, structural-mechanical, functional-technological, sanitary and other features of the product, as well as their degree of severity.

The quality of poultry products depends on several factors, but is mostly determined by the quality of farmed birds to be processed, their age, body weight, slaughter yield, fatness, the ratio of muscle and bone tissue, as well as valuable parts of the carcass, organoleptic characteristics and other. The quality of poultry meat is influenced by a number of factors: lifetime, slaughter and post-mortem. Lifetime factors and the long-term of effect exposure have an impact on the bird until slaughter. These include genetics, physiology, nutrition, keeping conditions and diseases. Short-term impact factors are manifested during the last 24 hours of the bird life in the period of preparation of poultry for slaughter. These include hunger before slaughter, capture, loading, transportation, conditions and the period within the processing plant, discharge, suspension on the conveyor, immobilisation, stunning and slaughter.

Slaughter and post-slaughter factors, manifested during the slaughter and processing of poultry, can mainly be attributed to the short-term effects, except for the storage of poultry meat in refrigerated and frozen conditions.

Visible manifestation of negative factors are common to all external defects that can be detected by organoleptic methods, and hidden, for example, for such defects as the pH of meat or its contamination - detected only as a result of specific analyzes.

The factors include the negative impact which can be disposable and non disposable. These vary from removable attributed disadvantages in carrying out technology requirements such as the equipment, the organization of production, to non removable (in accordance with the current level of development of the breed) such as poultry genetic construct and its response to stressors.

Negative factors affect the quality of the final product directly or indirectly. The impact of negative factors on the quality parameters of poultry are classified in the following areas: food and biological value, acceptability to the consumer, food safety and functional-technological properties.

Biochemical changes in birds meat are not well understood, there is no consensus about the meaning of life and its maturation. It is known that the maturation process has a positive effect on the product quality, improving its organoleptic characteristics. However, it has not been studied with respect to poultry meat.

After the termination of life of an animal, processes take place which are connected to the termination of the supply of oxygen, the absence of oxidative transformations and circulation, inhibition of synthesis and generation of energy accumulation in the tissues of the final product. Disorders of the osmotic pressure in the meat cells takes place, resulting in self-destruction of life-supporting systems and spontaneous development of enzymatic processes which maintain their catalytic activity for a long time. As a result of the disintegration of tissue components, meat quality characteristics (mechanical strength, the level of water-binding capacity, taste, color, flavor) and its resistance to microbiological processes vary considerably.

Autolysis of meat is the process of changes in the chemical composition, structure and properties of raw meat after slaughter under the influence of its own enzymes. Meat properties change occurs in a certain sequence in accordance with the basic stages of autolysis (fresh meat → completion of rigor mortis rigor mortis and ripening → deep autolysis), and its quality indicators become significantly different.

During the long maturation of meat there is a significant improvement in sensory and technological characteristics. In the early stages of autolysis meat has a pronounced taste and odor which, depending on the storage temperature appear only for 3-4 hours due to the formation of products of the enzymatic breakdown of proteins and peptides (glutamic acid, threonine, sulfur-containing amino acids), nucleotides (inosine, hypoxanthine etc.), carbohydrates (glucose, fructose, pyruvic and lactic acid), lipids (fatty acids, low molecular weight) and creatine, creatinine and other nitrogenous compounds.

The question is now directed toward use of raw materials, taking into account the progress of autolysis is of particular importance, since the share of animals arriving at the processing of industrial complexes is substantially increased. At the same time, due to post mortem processes in the muscle tissue, significant deviations from the normal development of autolytic processes are found. Accordingly, one should distinguish meat with high final pH (DFD) from meat and exudative (PSE) with a low pH. Most companies exclude maturation of poultry meat, which leads to the appearance of meat markings, etc.

CONCLUSIONS

Analysis of the development status of poultry meat in the country proves that it is the basis for the production of poultry meat. The effectiveness of poultry feed has increased and the volume of processing that needs to be improved. Thus, the problems highlighted by the quality of poultry meat, allows one to find ways to solve them. It is necessary to pay attention to the influence of a number of natural, technological and organizational factors, at all stages of production, which can lead to lower quality, the appearance of a variety of product defects and related quantitative loss of meat.

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PRODUCTION QUALITY OF FALSE FLAX (<i>Camelina sativa</i> (L.) Crantz) 'STEPSKI' SEED, A NEW PROMISING OILSEED CROP FOR DIFFERENT USES	
<i>Ana Marjanović Jeromela^{1*}, Sreten Terzić¹, Sandra Cvejić¹, Milan Jocković¹, Tijana Zeremski¹, Dragana Miladinović¹, Siniša Jocić¹, Johann Vollmann²</i>	296
THE INFLUENCE OF THE FOOD SURFACE AND MATRIX ON NOROVIRUS DETECTION BY RT-qPCR	
<i>Dragoslava Radin*, Ivana Zivkovic</i>	300
CYPRODINIL AND FLUDIOXONIL FUNGICIDE RESIDUES AND DISSIPATION IN LETTUCE	
<i>Sanja Lazić, Dragana Šunjka*, Milica Pantelić, Slavica Vuković, Nemanja Brzaković</i>	306
SAFE USE OF NEONICOTINOIDS IN SOME VEGETABLES IN TERMS OF RESIDUES	
<i>Sanja Lazić, Dragana Šunjka*, Slavica Vuković</i>	311
EFFECT OF ACRYLAMIDE TREATMENT ON MORPHOMETRICAL PARAMETERS OF PANCREATIC BETA CELLS	
<i>Milena Stošić¹, Jelena Marković², Milica Matavulj²</i>	316
THE CONTENT EXPLORATION OF SOME FOOD ADDITIVES IN DIFFERENT SAMPLES OF INSTANT COFFEE 3in1 AND 2in1	
<i>Milena Miljković N.^{1*}, Vojkan Miljković M.², Violeta Rakić³, Marija Petrović¹</i>	321
THE POULTRY MARKET IN UKRAINE: PROBLEMS, OBJECTIVE AND SOLUTIONS	
<i>Natalia Povarova, Liudmyla Melnyk*</i>	325
QUALITY OF BEVERAGE OF HYDROLYZED MILK PERMEATE	
<i>Dragana Ilić-Udovičić^{1*}, Spasenija Milanović², Mirela Ilić², Anamarija Mandić³, Dajana Vukić², Katarina Kanurić², Vladimir Vukić²</i>	329
CADMIUM IN BEEF, PORK AND CHICKEN MEAT	
<i>Biljana Pećanac, Jelena Aničić, Slobodan Dojčinović, Drago N. Nedić</i>	335
IMPROVEMENT OF THE WHEAT STARCH SUSPENSIONS MICROFILTRATION PROCESS USING TWISTED TAPE AS TURBULENCE PROMOTER	
<i>Bojana Ikonić^{1*}, Olivera Šimurina², Aleksandar Jokić¹, Jelena Pavličević¹, Zita Šereš¹, Zoltan Zavargo¹, Bojana Filipčev²</i>	341
DEVELOPMENT OF BAKERY PRODUCTION TECHNOLOGY FUNCTIONALITY LONG TERM IMPLEMENTATION	
<i>Iryna Solonytska¹, Nataliya Tkathenko¹, Vitalii Dobrovolskyi¹</i>	347
CONTENTS OF TOTAL PHOSPHORUS IN DIFFERENT MEAT PRODUCTS	
<i>Vladimir Kurćubić^{1*}, Pavle Mašković¹</i>	352
BIOFILM FORMING ABILITY OF FOOD-BORNE RELATED PATHOGENS	
<i>Ivana Čabarkapa^{1*}, Dubravka Milanov², Radmilo Čolović¹, Zorica Tomićić¹, Ana Varga¹, Olivera Đuragić¹, Sanja Popović¹, Marija Škrinjar³</i>	358
MOLECULAR AND MORPHOLOGICAL IDENTIFICATION OF <i>ASPERGILLUS</i> SPECIES ON CORN SEEDS	
<i>Tijana Barošević¹, Ferenc Bagi¹, Dragana Budakov¹, Sándor Kocsubé², János Varga^{†2}, Mila Grahovac¹, Vera Stojšin¹</i>	365